This datasheet describes the specification according to the standard 1288 for Characterization and Presentation of Specification Data for Image Sensors and Cameras of the European Machine Vision Association (EMVA) (see www.standard1288.org). The measurements were performed with an AEON ACC3 RGB Release 3, 20.01.2104, SN 0005. The performance parameters and estimated accuracy of the measurements are described in the technical report for the instrument, its calibration in the corresponding calibration report.

Vendor: MATRIX VISION  
Model: mvBlueCOUGAR-X102eGE  
Serial number: GX001880  
Sensor diagonal: 8.69 mm  
Lens category: C-Mount  
Resolution: 1280 × 1024, 10 bit  
Pixel size: 5.30 µm × 5.30 µm  
Sensor type: CMOS  
Shutter type: Global  
Overlap capabilities: Overlapping  
Maximum frame rate: 45.5 Hz  
Interface type: GigE Vision

Type of data presented: Single  
Operation point 1, (page 4)  
Wavelength centroid: 534.2 nm  
Wavelength FWHM: 30.9 nm  
Gain, offset: Gain = 0 dB, Offset = 17.0  
Operation point 2, (page 16)  
Wavelength centroid: 629.5 nm  
Wavelength FWHM: 13.1 nm  
Gain, offset: Gain = 0 dB, Offset = 17.0

Optional data measured: None

Spectral sensitivity m0388, 19.06.2015

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EMVA 1288 Summary Sheet for Operating Point 1

<table>
<thead>
<tr>
<th>Type of data</th>
<th>Single</th>
<th>Gain, offset</th>
<th>Gain = 0dB, Offset = 17.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure time</td>
<td>5.0 ms</td>
<td>Environmental temperature</td>
<td>26.1°C</td>
</tr>
<tr>
<td>Frame rate</td>
<td>0.0 Hz</td>
<td>Camera temperature</td>
<td>25.9°C</td>
</tr>
<tr>
<td>Data transfer mode</td>
<td>Mono10</td>
<td>Wavelength, centr., FWHM</td>
<td>534 nm, 30.9 nm</td>
</tr>
</tbody>
</table>

![Photon transfer](image1)

Quantum efficiency
\[ \eta = 0.556 \]

Gain
\[ K \text{ (DN/e)} = 0.127 \]
\[ 1/K \text{ (e/DN)} = 7.879 \]

Dark noise & DSNU
\[ \sigma_d \text{ (DN)} = 2.94 \]
\[ \sigma_0 \text{ (e)} = 23.0 \]
\[ \text{DSNU}_{1288} \text{ (DN)} = 5.41 \]
\[ \text{DSNU}_{1288} \text{ (e)} = 42.64 \]

Signal-to-noise ratio & PRNU
\[ \text{SNR}_{\text{max}} = 88 \]
\[ \text{SNR}_{\text{max}} \text{ (dB)} = 38.9 \]
\[ \text{SNR}_{\text{max}} \text{ (bits)} = 6.5 \]
\[ 1/\text{SNR}_{\text{max}} \text{ (%)} = 1.14 \]
\[ \text{PRNU}_{1288} \text{ (%)} = 1.711 \]

Nonlinearity
\[ \text{LE} \text{ (%)} = 0.68 \]

Sensitivity & saturation
\[ \mu_{p,\text{min}} \text{ (p)} = 42.5 \]
\[ \mu_{e,\text{min}} \text{ (e)} = 23.6 \]
\[ \mu_{p,\text{sat}} \text{ (p)} = 13863 \]
\[ \mu_{e,\text{sat}} \text{ (e)} = 7714 \]

Dynamic range
\[ \text{DR} = 326 \]
\[ \text{DR (dB)} = 50.3 \]
\[ \text{DR (bit)} = 8.4 \]

Dark current
\[ \mu_{c,\text{mean}} \text{ (DN/s)} = 109.30 \]
\[ \mu_{c,\text{mean}} \text{ (e/s)} = 861.13 \]
\[ \mu_{c,\text{var}} \text{ (e/s)} = 366.99 \]
EMVA 1288 Summary Sheet for Operating Point 2

Type of data | Single |
---|---|
Exposure time | 5.0 ms |
Frame rate | 0.0 Hz |
Data transfer mode | Mono10 |
Gain, offset | Gain = 0dB, Offset = 17.0 |
Environmental temperature | 26.1°C |
Camera temperature | 25.9°C |
Wavelength, centr., FWHM | 630 nm, 13.1 nm |

Quantum efficiency
\[
\eta = 0.585
\]

Gain
\[
K \text{ (DN/e)} = 0.122 \\
\frac{1}{K} \text{ (e/DN)} = 8.185
\]

Dark noise & DSNU
\[
\sigma_d \text{ (DN)} = 2.94 \\
\sigma_0 \text{ (e)} = 23.9 \\
\text{DSNU}_{1288} \text{ (DN)} = 5.41 \\
\text{DSNU}_{1288} \text{ (e)} = 44.30
\]

Signal-to-noise ratio & PRNU
\[
\text{SNR}_{\text{max}} = 89 \\
\text{SNR}_{\text{max}} \text{ (dB)} = 39.0 \\
\text{SNR}_{\text{max}} \text{ (bits)} = 6.5 \\
\frac{1}{\text{SNR}_{\text{max}}} \text{ (%)} = 1.12 \\
\text{PRNU}_{1288} \text{ (%)} = 2.198
\]

Nonlinearity
\[
\text{LE} \text{ (%)} = 0.59
\]

Sensitivity & saturation
\[
\mu_{p,\text{min}} \text{ (p)} = 42.0 \\
\mu_{e,\text{min}} \text{ (e)} = 24.6 \\
\mu_{p,\text{sat}} \text{ (p)} = 13519 \\
\mu_{e,\text{sat}} \text{ (e)} = 7910
\]

Dynamic range
\[
\text{DR} = 322 \\
\text{DR (dB)} = 50.2 \\
\text{DR (bit)} = 8.3
\]

Dark current
\[
\mu_{c,\text{mean}} \text{ (DN/s)} = — \\
\mu_{c,\text{mean}} \text{ (e/s)} = — \\
\mu_{c,\text{var}} \text{ (e/s)} = —
\]